



SUBMITTAL DUE DATE: November 18, 2016

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U.S. Environmental Protection Agency (U.S. EPA)
1200 Pennsylvania Ave., NW.
Washington, DC 20460-0001

Subject: Copper Compounds: Copper sulfate (0636), Copper compound group II (0649), Copper salts (4026), Copper and Oxides (4025), Draft Risk Assessments (EPA-HQ-OPP-2010-0212)

Dear Mr. Page and Mr. Savage:

On behalf of the Bay Area Clean Water Agencies (BACWA), we thank you for the opportunity to comment on the draft risk assessment for copper compounds, which have diverse outdoor and indoor uses as both conventional and antimicrobial pesticides.

BACWA's members include 55 publicly owned wastewater treatment facilities ("POTWs") and collection system agencies serving 7.1 million San Francisco Bay Area residents. We take our responsibilities for safeguarding receiving waters seriously.

BACWA is especially interested in pesticides that are used by consumers for which there is a transport pathway to the sanitary sewer. Omitting evaluation of this environmental exposure pathway can prove costly for POTWs, due to the potential for pesticides to cause or contribute to wastewater treatment process interference, NPDES Permit compliance issues, impacts to receiving waters, recycled water quality and/or biosolids reuse, in addition to exposing POTWs to the potential for third party lawsuits under the Clean Water Act.

Our review of the copper compounds draft ecological risk assessment¹ identified two use patterns that may pose significant risk to aquatic species that were not fully evaluated in the risk assessment. In this letter, we ask that U.S. EPA evaluate risks and examine risk mitigation options for the following two copper uses:

1. Copper products that are used in swimming pool, spa, and fountain treatments because pools, spas, and fountains are often discharged to POTWs in lieu of discharging to gutters /storm drains, and

¹ U.S. EPA OPP, Coppers (copper sulfate, copper group II, copper salts, complexes, hydroxides, and oxides): Ecological Risk Assessment and Effects Determination for Registration Review, June 23, 2016.

2. Fabric treatments and subsequent discharges to POTWs during washing of the treated end product (e.g., clothing).

BACWA's Interest in Copper Compounds

BACWA and our colleagues in the wastewater community have been actively engaged in issues related to metals-based pesticides for many years, including copper metal, copper compounds, and nanocopper.^{2,3,4,5,6} We continue to have concerns about how metals-based pesticides – particularly antimicrobials – are regulated and used. Certain use patterns (primarily indoor uses) may result in discharges of copper to wastewater treatment plants. Copper is a persistent, bioaccumulative pollutant that is highly toxic to aquatic life at low concentrations. Furthermore, copper is one of the most common causes of water quality impairment.

The San Francisco Bay area has invested millions of dollars to identify and address sources and control measures for copper water pollution, which today is closely managed through a special water quality program embodied in the San Francisco Bay Regional Water Quality Control Board's Basin Plan. Depending on copper concentrations in the Bay, this program may require POTWs with increasing copper effluent levels to develop and implement plans to control these increasing levels. If the copper pesticide uses, like increasingly popular copper-containing fabrics, cause copper effluent concentrations to grow, it will be challenging to comply with this requirement, since in California (like most states), state law precludes regulation of pesticides sales or use by municipal wastewater treatment plants.

Use of National Recommended Water Quality Criteria for Effects Assessment

We applaud OPP's use of the water quality criteria developed by the U.S. EPA Office of Water (OW) for effects assessment (i.e., to calculate risk quotients) in the copper pesticides ecological risk assessment. This approach is an excellent example of appropriate integration of downstream Clean Water Act compliance considerations into OPP's Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) implementation program.

Copper Pool, Spa and Fountain Treatments

U.S. EPA has registered multiple copper-containing products for treating swimming pools, spas, and fountains. Swimming pools may be emptied for cleaning every two to seven years and spas may be drained as often as every three months.⁷ Fountains may also be drained frequently for maintenance. The water is discharged to the storm drain system, to sanitary sewer lines flowing to wastewater facilities, or sometimes to surrounding landscaped areas.

Due to concerns about the water quality impacts from pool, spa, and fountain water flowing untreated into surface waters, many of the nation's water regulators and many municipal

² BACWA (2013) Registration Application for New Pesticide Active Ingredient – Cuprous Iodide (Docket No. EPA-HQ-OPP-2013-0433).

³ BACWA (2012). Comment Letter on Nanosilver Petition (Docket Number EPA-HQ-OPP-2011-0370).

⁴ Tri-TAC (2010). Comment Letter on EPA Registration Review for Copper in Several Forms (Docket Number EPA-HQ-OPP-2010-0212).

⁵ Tri-TAC (2007). Request to EPA to Require Registration of Copper Biocide-Containing Fabrics.

⁶ Tri-TAC (2006). Comment Letter on Coppers Risk Assessment (Docket Number EPA-HQ-OPP-2005-0558).

⁷ Pool Corp (2016). Frequently Asked Questions. Available at <http://www.swimmingpool.com/faq>.

stormwater agencies are directing pool, spa, hot tub, and fountain owners to discharge to the sanitary sewer. Many wastewater agencies support this practice because some constituents, such as pH and suspended solids, may be effectively reduced through treatment; however, wastewater treatment plants are not specifically designed to remove pesticides. Some antimicrobials, if discharged in sufficient quantities, have potential to interfere with the biological treatment processes at municipal wastewater treatment plants. While some agencies have the resources to work with institutional, public and commercial swimming pool operators regarding swimming pool best management practices and the types of pool chemicals they use, the vast majority of swimming pools are privately owned residential pools, the owners of which are not easily reached. With approximately 1.2 million in-ground pools in California and 5 million pools nationwide,⁸ and countless more spas and fountains, municipal agencies have limited authority and resources to identify and prevent inappropriate discharges.

The Draft Risk Assessment did not examine the use of copper in pools, spas, and fountains, noting, “While exposure is possible from these uses, these exposures are expected to be lower than that from conventional and non-pesticidal uses” (Page 2). Because discharge of copper pesticide-containing water during dry weather could cause a typical urban creek to exceed the acute copper water quality criterion, the solution being promoted in municipal stormwater NPDES permits is to divert this discharge to the sewer system. We request that U.S. EPA examine the implications of diverting these discharges to the sewer. We do not expect discharges of copper-treated pool, spa, and fountain water to create a significant increase in typical municipal wastewater treatment plant influent copper levels, but we lack the necessary market data to confirm this.

Pesticide labels that include adequate mitigation are an essential line of defense needed to prevent impacts on receiving waters, especially since the label may be the only source of information on this subject seen by the end users. We recognize that regulations regarding the draining of pools and spas vary widely across the country, and because the label language is legally binding, it must be carefully constructed. At the same time, it is important to acknowledge the potential water quality risk from discharges and to provide instructions that inform users of their obligations to ensure that discharge of treated water does not harm downstream aquatic ecosystems or cause sewer line backups.⁹

EPA recently proposed the following labeling language for the pool pesticide, lithium hypochlorite:¹⁰

“Before draining a treated pool, spa, or hot tub, contact your local sanitary sewer and storm drain authorities and follow their discharge instructions. Do not discharge treated pool or spa water to any location that flows to a gutter or storm drain or natural water body unless discharge is approved by state and local authorities.” (Page 10)

BACWA fully supported this proposed label language, and requests that this same language be

⁸ P.K. Data, Inc. (2012). Phone conversation with staff member Joshua Darling, August 15.

⁹ High-flow swimming pool discharges to the sanitary sewer can create a sewer back up, potentially spilling untreated sewage onto streets and into storm drains, which could also create an acute hazard. Maintaining low flow rates (e.g., discharge through a garden hose rather than a fire hose) avoids such problems.

¹⁰ Lithium Hypochlorite Proposed Interim Registration Review Decision, Docket Number EPA-HQ-OPP-2013-0606, U.S. EPA, June 2016.

required on the labels of all copper-containing pool, spa, and fountain pesticide products, because it creates a balanced mitigation approach for managing these pesticide-containing discharges.

Copper Fabric Treatments

The Draft Risk Assessment did not include an assessment of copper uses in fabrics and other impregnated materials. Both conventional copper and nanocopper are being used in an increasing number of fabric products, including socks, apparel, pillow cases, carpeting, and medical linens. Since most of these products are covered by FIFRA's "treated article exemption" and thus exempt from state pesticide regulation, it is essential for U.S. EPA to examine the full life cycle impacts of these copper uses in its ecological risk assessment.

During use, most treated fabrics are washed multiple times. As the products are washed the material is progressively degraded and copper ions and copper-containing particles are discharged to the sewer. BACWA requests that EPA conduct a thorough evaluation of copper-treated materials impacts on wastewater facilities. Such an analysis would need to be conducted so as to acknowledge the other pesticide and non-pesticide copper sources in wastewater.

Pesticide Registration & Review Process Must Prevent Water Quality Impacts

In closing, we request that OPP ensure that the use of copper pesticides will not interfere with municipal wastewater treatment plant operations, threaten NDPEs permit compliance, limit biosolids management options, or harm surface water or recycled water quality. It is essential that U.S. EPA's pesticide regulatory processes adequately consider – and fully mitigate – impacts to wastewater treatment processes, wastewater effluent, recycled water, and biosolids. We strongly encourage OPP to continue to work with OW toward this objective.

Due to strict copper effluent limits in discharge permits, wastewater agencies have implemented pollution prevention programs to identify and reduce copper discharges to sanitary sewer systems. These programs have been very successful in reducing wastewater influent and effluent copper concentrations. However, the growing widespread use of copper pesticide products – particularly copper pesticide treated fabric and other articles exempt from state and local regulation – that release copper into wastewater systems could increase copper concentrations in wastewater influent and effluent, leading to adverse effects on POTWs and waterways.

Thank you for your consideration of our comments. If you have any questions, please contact BACWA's Project Managers, Karin North at (650) 329-2104 or Karin.north@cityofpalocalto.org, or Melody LaBella at (925) 229-7370 or mabella@centralsan.org.

Respectfully Submitted,

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